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Patent 09/825,589

REMARKS

Claims 1-41 are pending in the application. Claims 1, 3, 14, and 29 have been amended. Claims 42-44 have been added. No claims have been canceled. No claims have been allowed.

Rejections under 35 U.S.C. § 101

Claims 1-13 were rejected under 35 U.S.C. § 101 as being directed to non-statutory subject matter. Applicants have amended claim 1 to recite a computer-implemented method for generating a schedule. Applicants respectfully submit that the claimed invention is within the technological arts, and produces a useful, concrete and tangible result. Applicants submit that the invention of claims 1-13 is patentable under 35 U.S.C. § 101, and respectfully request withdrawal of the rejection.

Rejections under 35 U.S.C. § 102

Claims 1-41 were rejected under 35 U.S.C. § 102(b) as being anticipated by ProModel™ Simulation Software as described in:

Hefline and Harrel, "Simulation Modelling and Optimization using ProModel™", Proceedings of the 1998 winter Simulation Conference, 1998, pp. 191-197 ("Reference A");

Web.archive.org web page of February 21, 1999, "Capacity Planning using ProModel™ Simulation" ("Reference B"); and

Web.archive.org web page of April 18, 1999, "Product Guide" ("Reference C").

Applicants respectfully traverse the rejections under 35 U.S.C. § 102. Reference A discloses a simulation modeling and optimization process using a version of a software program (ProModel™ Optimization Suite) that is designed for modeling all types of manufacturing systems and supply chain systems. (paragraph 1). Reference B is an overview of capacity planning using ProModel™ Simulation. Reference C is a "Product Guide" by ProModel Corporation.

Applicants respectfully submit that the claims are not anticipated by ProModel™ Simulation Software, as described in the cited references. For example, claim 1 as

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amended recites a computer-implemented method for generating a schedule for a plurality of employees with varying skill sets for a time period, wherein the plurality of employees have varying overlapping skill sets that enable them to perform various tasks, and wherein employees are shared across tasks within the time period. None of the cited references teach or disclose such a method.

Reference A is an academic paper which provides an overview of one software product from ProModel Corporation, the "ProModel™ Optimization Suite". Reference A also briefly describes other aspects of the software program, including running the simulation and animation, reports, and optimization. "The ProModel Optimization Suite is a powerful yet easy-to-use simulation tool for modeling all types of manufacturing systems ranging from small job shops and machining cells to large mass production, flexible manufacturing systems, and supply chain systems." (paragraph 1). Also, "ProModel is a simulation and animation tool designed to quickly yet accurately model manufacturing system of all types, particularly supply chain systems". (paragraph 2). Applicants note that ProModel™, as described here, has no relation to staff planning, forecasting or scheduling, for example in a call center environment.

Reference B is a brief description of capacity planning using ProModel™ Simulation.

Reference C is ProModel Corporation "Product Guide" which states that the software products offered are specifically designed to meet the needs of individuals working in various industries (paragraph 1). Applicants respectfully assert that Reference C specifically lacks any teaching or disclosure regarding any method at all. Reference C is merely a list of purported industries and end-user applications that may find ProModel corporation products useful.

Claim 1 as amended recites a computer-implemented method for generating a schedule for a plurality of employees with varying skill sets for a time period, wherein the plurality of employees have varying overlapping skill sets that enable them to perform various tasks, and wherein employees are shared across tasks within the time period. Applicants submit that the references simply do not teach or suggest skill sets, overlapping skill sets, or employees being shared across tasks as claimed.

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Claim 1 further recites that during execution of the scheduling program, determining an effect on the schedule of an incremental change to the plurality of user inputs. This limitation is not taught by ProModel™ Simulation Software.

Claim 1 further recites receiving a plurality of user inputs to a scheduling program, including a number of employee designations that each refer to a unique employee, and a number of skill sets that each correspond to one of the employee designations. Applicants submit that the cited references do not teach any of the stated limitations. As just one example, the Office Action states: "Reference A page 193 paragraph 2.5, line 3-4, software defines skill sets required as defined in processing logic required by sources to function at specific location in model". Applicants respectfully disagree. For example, the cited passage of Reference A does not teach "and a number of skill sets that each correspond to one of the employee designations" (claim 1) as stated in the Office Action. The cited passage absolutely does not teach skill sets at all; much less skill sets as claimed. Applicants submit that nothing in the cited passage can be interpreted as suggested in the Office Action.

The cited reference need only be shown to lack one limitation to show that the claimed invention is not anticipated by the reference. Applicants therefore submit that claim 1 is not anticipated by ProModel™ Simulation Software based on the one limitation just discussed. However, Applicants wish to respond fully to the rejections, and therefore will address the further elements of claim 1 that were addressed by the Office Action.

Claim 1 as amended further recites receiving a user input that changes the number of employee designations by indicating at least one changed employee. Applicants respectfully submit that Reference A, page 193, paragraph 2.7, lines 1-2 does not teach such a limitation, as suggested by the Office Action. This passage merely states that custom work and break schedules can be defined. Custom work and break schedules are not defined or explained in the reference. Receiving a user input that changes the number of employee designations is not disclosed. Applicants respectfully submit that the claimed limitation is not disclosed. The Office Action states, with reference to the cited passage, that the shift schedule can be modified to indicate at least

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one changed employee. Applicants note that this is not stated or suggested by the passage. ProModel™ Simulation Software does not teach the quoted limitation of claim 1.

Claim 1 as amended further recites estimating an effect of the at least one changed employee on effective staffing levels for each of the various tasks. The Office Action cites Reference A, page 195, paragraph 7, lines 13-14, and states “software allows estimating the impact of at least one changes employee on staffing levels for each of tasks in model.” Applicants respectfully submit that the Examiner is reading meaning into the reference inappropriately. The stated passage is: “During the simulation, you can query the status of the resources or the current value of any logic element”. The claimed limitation is not taught or suggested here. No effective staffing levels for various tasks are disclosed in the reference. No estimation of the effect of at least one changed employee is disclosed in the reference. The claimed “estimating” is claimed as part of, during execution of the scheduling program, determining an effect on the schedule of an incremental change to the plurality of user inputs. This limitation is not taught by ProModel™ Simulation Software.

Claim 1 further recites generating estimated effective staffing levels for each of the various tasks as part of, during execution of the scheduling program, determining an effect on the schedule of an incremental change to the plurality of user inputs. The cited passage of Reference A, page 196, paragraph 10, lines 8-10, states “For each optimization project, you will tell SimRunner which model to analyze/optimize, which input factors to change, and how you measure system simulation performance”. Applicants respectfully submit that this passage teaches running different simulations, each of which is analyzed or optimized. This teaches away from, during execution of the scheduling program, determining an effect on the schedule of an incremental change to the plurality of user inputs, at least in part by requiring simulation to be run in order to perform analysis or optimization. Therefore, this limitation is not disclosed or suggest by ProModel™ Simulation Software.

Applicants respectfully submit that claim 1 is not anticipated by the prior art, including ProModel™ Simulation Software. Applicants further submit that claims 2-13

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depend from claim 1 and include further limitations thereon. Therefore, claims 2-13 are similarly not anticipated by ProModel™ Simulation Software. However, Applicants wish to be very completely responsive to the points raised in the Office Action, and will thus continue to address the claims addressed in the Office Action.

Regarding claim 2, Applicants respectfully disagree that the passage teaches the claimed limitation. The passage states that there is such a thing as defining work and break schedules. The ProModel™ Simulation Software explained in the reference is for modeling manufacturing systems, which can include worker schedules. However, there is no teaching in the references that departs from creating a model and then simulating it. The model can be changed, and the new model can be simulated. There is no teaching regarding user input to add or subtract an employee designation as claimed in addition to the previously distinguished limitations of claim 1, which include, during execution of the scheduling program, determining an effect on the schedule of an incremental change to the plurality of user inputs.

Regarding claim 3, Applicants respectfully disagree that the passage teaches the claimed limitation. The cited statement in Reference B is a characterization of a touted capability, without any enablement. However, even without more explanation Applicants find no teaching regarding the claimed limitation of determining a number of changes that can be made to the schedule during the scheduling method without simulating a proposed schedule. On the contrary, the reference states “with PROMODEL simulation products, you can...” There is no suggestion of any ability to determine anything without performing a simulation.

Regarding claim 4, Applicants respectfully disagree that the passages teaches the claimed limitation. The Examiner is investing the passages with meaning far beyond what can be properly inferred from the words. For example, Reference A, paragraph 8, lines 1-2 refer to customizing output reports. The passage simply does not disclose calculating a total effective work a changed employee will perform. The other cited passages are similarly incorrectly interpreted and/or applied. There is no teaching regarding adjusting work distribution as claimed. Applicants respectfully assert that the claimed limitation is not disclosed.

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Regarding claim 5, Applicants respectfully disagree that the passage teaches the claimed limitation. The processing (or routing) element “defines the processing sequence and flow of logic elements between routing locations...”. No words in the passage refer to distributing a changed employee’s effective work load. Applicants respectfully assert that the claimed limitation is not disclosed.

Regarding claim 6, Applicants respectfully disagree that the passage teaches the claimed limitation. Applicants invite the Examiner to explain how the cited passage describes the at least one predetermined factor as claimed. Applicants respectfully submit that the Examiner is impermissibly reading meaning into the reference that is simply not there.

Regarding claim 7, Applicants respectfully disagree that the passage teaches the claimed limitation. Applicants invite the Examiner to explain how the cited passage describes calculating a total effective work of a changed employee as claimed. Applicants respectfully submit that the Examiner is impermissibly reading meaning into the reference that is simply not there.

Regarding claim 8, Applicants respectfully disagree that the passage teaches the claimed limitation. Applicants invite the Examiner to explain how the cited passage describes adjusting the work distribution as claimed. Applicants respectfully submit that the Examiner is impermissibly reading meaning into the reference that is simply not there.

Regarding claim 9, Applicants respectfully disagree that the passage teaches the claimed limitation. Applicants note that the ServiceModel variant is not disclosed with any specificity at all. The ProModel variant is discussed at a high level in Reference A, but is stated not to apply to call centers. Further, Applicants have shown that Reference A does not anticipate the claimed invention. Applicants respectfully submit that the Examiner is drawing inferences that are not only unsupported by the cited references, but are contradicted by the cited references. The claimed limitation is simply not taught by ProModel™ Simulation Software. Applicants further note that ProModel™ Simulation Software was cited in the 35 USC 102 rejection, and not “ServiceModel.”

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Regarding claim 10, Applicants respectfully disagree that the passage teaches the claimed limitation. Applicants note that the ServiceModel variant is not disclosed with any specificity at all. The ProModel variant is discussed at a high level in Reference A, but is stated not to apply to call centers. Further, Applicants have shown that Reference A does not anticipate the claimed invention. For example, the references do not disclose a task, a call queue, or a subtask as claimed. Applicants respectfully submit that the Examiner is drawing inferences that are not only unsupported by the cited references, but are contradicted by the cited references. The claimed limitation is simply not taught by ProModel™ Simulation Software. Applicants further note that ProModel™ Simulation Software was cited in the 35 USC 102 rejection, and not "ServiceModel."

Regarding claim 11, Applicants respectfully disagree that the passage teaches the claimed limitation. The cited passage, and ProModel™ Simulation Software in general, do not disclose or teach skill sets as claimed. The claimed limitation is simply not taught by ProModel™ Simulation Software.

Regarding claim 12, Applicants respectfully disagree that the passage teaches the claimed limitation. The cited passage, and ProModel™ Simulation Software in general, do not disclose or teach dividing a schedule as claimed. The cited passage discloses different users (individuals) working separately on different sections of a large model. Applicants submit that this is distinguished from processing time intervals with different processors as claimed.

Regarding claim 13, Applicants respectfully disagree that the passage teaches the claimed limitation. The cited passage, and ProModel™ Simulation Software in general, do not disclose or teach dividing a schedule as claimed. The cited passage discloses different users (individuals) working separately on different sections of a large model. Applicants submit that this is distinguished from performing the method on multiple parallel processors as claimed.

For all of the foregoing reasons, Applicants respectfully submit that claims 1-13 are not anticipated by ProModel™ Simulation Software.

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The Office Action applies the same rejection of claims 1-13 to claims 14-41. Applicants respectfully apply the same arguments traversing the rejection of claims 1-13 to claims 14-41 as amended.

New claim 42 recites:

A computer-implemented method for generating a schedule for a plurality of employees with various overlapping skill sets, the method comprising:

initiating an automatic scheduling process that receives employee data as an input;

determining whether to simulate a proposed schedule, including measuring a cumulative error of using an estimation function from results of the simulation, and a predetermined allowed error;

if it is determined not to simulate the proposed schedule, continuing with the method including evaluating and outputting the proposed schedule;

determining whether a change has been made to the employee data;

if a change has been made to the employee data, calculating an effective change to staffing levels; and

continuing with the method including evaluating and outputting the proposed schedule.

Applicants respectfully submit the ProModel™ Simulation Software fails to include multiple limitations of claim 42, including at least the limitation of determining whether to simulate a proposed schedule, including measuring a cumulative error of using an estimation function from results of the simulation, and a predetermined allowed error. For this reason, Applicants submit that claim 42, and its dependent claims 43 and 44, are not anticipated by ProModel™ Simulation Software.

CONCLUSION

In view of the foregoing amendments and remarks, Applicants respectfully submit that claims 1-44 are in condition for allowance. The allowance of the claims is earnestly requested. The Examiner is invited to call the undersigned if there are any issues that remain to be resolved prior to allowance of the claims.